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THE SUBMARINE FORCE: UTILITY IN THE FUTURE NMS?

CORE COURSE ESSAY

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"It is always thus, impelled by a state of mind which is destined not to last, that we make our irrevocable decisions "

Marcel Proust (1871-1922), French novelist

"There is not a fiercer hell than the failure in a great object."

John Keats (1795-1821), English poet

Introduction

Impelled by a state of mind that has lasted the past seven years, the Department of Defense has been struggling with the concept of a comprehensive military strategy for an uncertain future. In this quest, force structure debate has often supplanted strategic consideration in the decision making process. Our "great object" is to craft a strategy that can drive the decision making process, but our lack of innovative thinking may indeed be the "fiercer hell" to which Keats referred. The Base Force, the Bottom Up Review, and the current Quadrennial Defense Review (QDR) are all attempts to arrive at a force level prescription without understanding the strategic disease. In these attempts, force structure is usually reduced in a horizontal fashion, thus "the dinosaur that we know as the Armed Forces hopes to escape extinction or radical alteration by becoming a mini dinosaur."¹ One of the elements of this force structure is the nation's robust nuclear submarine force, both in its attack and ballistic missile variety.

As the momentum for a balanced budget grows, should an expensive element of military power like the nuclear submarine be reexamined in the light of a post Cold War National Military Strategy? From a strategic point of view, is another horizontal slice warranted or perhaps a vertical cut? This analysis will focus on the future submarine force structure in the context of the National Military Strategy of the 21st century and attempt to assess the relevancy of such a force.

¹ Szafranski, Richard *When Waves Collide: Future Conflict* (Joint Force Quarterly, Spring 1995), 78

The Current State of Affairs

The family tree of the nuclear submarine force is losing limbs faster than any other part of the Navy. Only the Russians are shedding force structure faster, though admittedly using some shortcuts. Turned away from a goal of 100 attack submarines (SSNs) in the late 1980s, the submarine force will be composed of 53 attack boats and 18 ballistic missile submarines by the turn of the century. According to the Office of Naval Intelligence, the Russian nuclear submarine force, our only near term peer competitor in this field of endeavor, will look about the same.

"The U.S. Navy has also decommissioned four classes of nuclear submarines. Ninety nuclear submarines will be decommissioned in 10 years. They cost \$1 billion a piece. That number represents 65 percent of the nuclear submarine force of this nation, decommissioned because they are not as relevant in this new world. I speak as a nuclear submariner myself, who realizes when we remove a whole class this way, we get the efficiencies of a vertical cut."²

Force level studies conducted by the submarine force type commanders (TYCOMs) show that current operational commitments require a minimum force of about 68 attack submarines. With decommissionings over the past three years reaching a rate of 12 to 15 submarines per year, the TYCOM requirement will be unanswered by the end of 1997.

The Navy now finds itself on the horns of a dilemma, attempt to hold the line on force level or cut force structure and reduce operational commitments. In fact, the National leadership is attempting to have it both ways by cutting force structure while maintaining or increasing mission requirements. This "do more with less" construct will be asymptotically approaching breakdown by the year 2000. The future National Military Strategy (NMS) must actually begin to drive the force levels soon or the military will

² Owens, William. *The Four Revolutions in Military Thinking* (ROA National Security Report, 1995), 32

return to its hollow version of the 1970s. This leads to the operative question: What are the trends in the future of the NMS and how does the submarine force contribute?

Trends in the Future NMS

Admiral William Owens provided an excellent forecast of the future NMS during his tenure as the Vice Chairman of the Joint Chiefs of Staff. Few were really listening, however, and remnants of Cold War thinking still stand as monuments to Pentagon bureaucratic inertia. His vision for the 21st Century strategic environment hinges on four "revolutions in military thinking." First we must understand that the only certainty in the post Cold War world is uncertainty. Secondly, the military budget has taken a 45% cut and at best will continue to be reduced at a slower rate. Third, the "jointness" promised by the Goldwater-Nichols Defense Reorganization Act is now becoming a reality after ten years of pursuit. And finally, the revolution in technology leading to dominant battlefield awareness will radically change the way we fight. This was a valiant first attempt to frame the context for the future NMS, however, it did not go far enough. For all of his foresight, Admiral Owens could not build a bench of decision making support willing to risk a strategic pause in order to revolutionize the future force.

Other strategic thinkers like Carl Builder, Michael Vickers, and Richard Szafranski have also contributed important elements to the debate. The Szafranski vision includes a new characterization of the threat environment: "The threat is gone. We now face only dangers."³ In this view, the need for large conventional combat forces seems to be less relevant, though he postulates that "Naval forces may well become the centerpiece of the military."⁴

Michael Vickers also sees the Navy, and in particular a Navy of the submerged variety, as a major force element in the future. "The capital ship of the fleet in 2020 might be an arsenal ship, a missile firing submersible armed with cruise and conventional ballistic

³ Szafranski, Richard *When Waves Collide: Future Conflict* (Joint Force Quarterly, Spring 1995), 78

⁴ Szafranski, Richard *When Waves Collide: Future Conflict* (Joint Force Quarterly, Spring 1995), 78

missiles. Attack submarines will likely remain essential to achieving undersea control, which might be all that could be expected against a large adversary with a robust anti-navy capability and a strategic nuclear deterrent."⁵ Andy Krepinevich echoed this sentiment in his 1996 study on future naval alternatives, calling for the conversion of Trident submarines into "stealth battleships"

Carl Builder notes that there are new roles for the Armed Forces that "are disturbing to many in the military."⁶ The submarine force leadership is attempting to embrace those "new roles" in the hope that the Szafranski and Vickers view takes root while only certain aspects of the Owens perspective get counted. This effort has been characterized by other branches of the Naval Service as an attempt by the submarine force to hold onto as much force structure as possible. Routinely since the end of the Cold War one can find pictures of U.S. submarines posted on stateroom walls on board a carrier with the caption reading "Will work for food." The arrogance of the "silent service" as the tip of the Cold War spear has been replaced by submariners with a willingness to talk and an openness to do most any battle group task. In the April 1997 issue of the Naval Institute Proceedings, Lieutenant Commander Gary Watson recognized the submarine force's past tendencies in his article, *Running Too Silent and Too Deep*, which is a call to reopen the submarine technology debate and embrace new missions.

The Submarine Force Vision

In late 1996, the submarine force published a vision statement, *Submarines in the Future Security Environment*. There were two themes that dominated the effort. First, "the characteristics of modern nuclear submarines, stealth, agility, endurance and precision firepower, provide our nation with flexible, multi-mission warships."⁷ Secondly, the submarine force is poised to "reach its full potential"⁸, by responding to many mission

⁵ Vickers, Michael. *Warfare in 2020: A Primer* (Wash. DC: CSBA, 1996), 10.

⁶ Builder, Carl. *Rethinking National Security and the Role of the Military* (RAND, 1995), 22.

⁷ OPNAV Staff. *Submarines in the Future Security Environment* (CNO, N87, 1996), 1.

⁸ OPNAV Staff. *Submarines in the Future Security Environment* (CNO, N87, 1996), 1.

areas that are either non-traditional or have not been emphasized since World War II. Antisubmarine Warfare (ASW) is still considered the dominant domain of the submariner but power projection and Special Operations Forces (SOF) support are also prominent in this vision. Forward presence and crises response have replaced bastion busting as mainstays of the submarine force mission.

This new vision also admits that the "Silent Service" concept is dead.

"The glue that holds all of these mission capabilities together is communications. Our submarines are no longer the "Silent Service" when it comes to communications connectivity and must achieve full inter-operability with the Joint Task Force. Future submarines will be equipped with automated systems which can transmit and receive on all frequency spectrums with data rates high enough to achieve full motion video, exchange quality imagery products, link with friendly forces, plan SOF missions, and update TOMAHAWK missions."⁹

The submarine force leadership has decided that becoming a full time battle group player is the key to force structure survival. The question remains: is this adjustment in submarine force mission priorities relevant in the 21st Century?

Relevancy in the 21st Century

When assessing the relevancy of the submarine force in the decades ahead it is prudent to treat the two types of nuclear submarines, ballistic missile and attack, as separate elements in the force structure equation.

Strategic nuclear deterrence is still advertised by STRATCOM as a relevant mission in the 21st Century. According to today's nuclear strategists, the nuclear triad of land based inter-continental ballistic missiles (ICBMs), manned bombers and submarine launched ballistic missiles (SLBMs) is considered a viable form of strategic deterrence in the future.

⁹ OPNAV Staff *Submarines in the Future Security Environment* (CNO, N87, 1996), 4

Flexibility, redundancy, and the safety of the triad are all cited as important elements in hedging against a future competitor in the realm of weapons of mass destruction (WMD)

The nation's nuclear strategy rests on three principles, reduce, deter, and defend. In an environment of diminishing resources and strategic arms reductions, the Trident submarine must compete with land based ballistic missiles to fill the deter portion of the mission. The lowest operating cost option clearly favors the land based ICBM. Survivability and flexibility clearly favor the submarine. The simple answer would be keep a little of both, but our future constraints may not allow this option. An argument can be made that the triad is not only costly but obsolete. With strategic arms reductions in the next decade likely to result in an inventory of 2000-3000 strategic nuclear warheads, cost becomes a major point of leverage. For the submarine force any reduction in the number of Trident submarines (SSBNs) may bring the equation to the breaking point. Unlike land based missiles, a reduction in the number of warheads and SLBMs may lead to fewer boats making the investment in separate home ports hard to justify. Currently, Kings Bay and Bangor support eight submarines each. How far down the force level ladder can we travel before it makes no sense to keep these bases open. The operating costs of each submarine as well as the cost of D-5 SLBM production also must be factored into the force level equation. The Russians have already concluded this debate and decided on the submarine as the key part of their future strategic force. By the year 2003, the Russian submarine force will account for 55% of their strategic warhead inventory. Admiral Yerofeyev, Commander of the Northern Fleet, has emphasized this decision by stating that the purpose of the general naval forces is to "Support the combat endurance of the SSBN" ¹⁰

The U.S. strategic leadership would do well to fully engage in the debate about the future relevancy of each component of the triad. It appears that the Russians have it right and that we should continue to move in the direction of the 1996 Nuclear Posture Review

¹⁰ Office of Naval Intelligence *Worldwide Submarine Challenges* (ONI 1997) 12

that relegates the strategic nuclear bomber force to non-alert status, reduces the number of land based ICBMs, and maintains the preponderance of our nuclear arsenal on board ballistic missile submarines

The attack submarine force also must be examined for relevancy in the 21st Century. Not only the question of how many attack submarines needs to be debated, but also the types of technology for the future should be open to question.

"We must pursue new technology to stay ahead of our competition. Designs for mission-specific submarines, like a guided missile SSN (SSGN) or submarine arsenal ship, should be investigated and produced in small numbers to test and evaluate. Every effort should be made to pursue the latest developments technology has to offer. No serious alternative should be dismissed, including the non-nuclear one, until it has been proved to have no utility for the submarine force."¹¹

Some of these issues have been debated thoroughly in the past ten years. Clearly the non-nuclear powered submarine is not an option unless we as a nation intend to defend our coastline as opposed to pursue forward presence. But the other technology issues including commercial off-the-shelf (COTS) weapons and sensor technology need to be debated. It is important during this debate to take advantage of the strategic pause that is available and not be pressed into production of costly one of a kind boats. Unlike airplanes, design and technology mistakes in the production of a submarine can be so costly that recovery becomes problematic.

The relevancy of the attack submarine force in the next two decades should be determined based on roles and missions but will continue to be a function of the submarine industrial base. Submarines will continue to be produced in lower numbers and with higher technology quotients. Because a submarine cannot be in more than one place at a

¹¹ Watson, Gary *Running Too Silent and Too Deep* (USNI Proceedings, April 1997), 34

time, the trade off between technology and force level has a finite limit. That limit will be reached at the turn of the century. Fifty attack submarines will not be able to keep up with requirements and thus may lose relevancy by substitution or mission elimination. Coupled with the premium being paid in the shipbuilding budget to maintain two nuclear submarine shipyards, the cost and lack of numbers in attack submarines may systematically make the SSN less relevant in the eyes of decision makers after the year 2000.

The nuclear submariners could lose critical mass early in the next century. This lack of self-sustaining capability will mean that the SSN will lose the capital ship status that it has enjoyed for the past forty years and have to become a niche player in the future.

The Future as a Niche Player

With a force level of 45-50 SSNs, the question of employment gains new significance. The SSN must be used in the correct niche to justify the cost of maintaining this limited force. A few assumptions with respect to the rest of the Navy are appropriate. First, the Navy will lose at least two Carrier Battle Groups (CVBGs) to the budget cutter's ax in the next decade. This will cut down the total number of SSNs associated with battle group support to twenty. Secondly, the surface combatants will continue to field robust missile capability. Along with the Arsenal Ship, this strike and Theater Missile Defense (TMD) capability will preclude the non-battlegroup SSN from having to fill a role as a tactical missile shooter. Third, the number of ASW assets outside the submarine force will continue to decline. The overwhelming share of the ASW mission will fall on the shoulders of the submarine force. One is tempted to ask, what ASW mission? The answer is clear when the number of countries operating submarines is evaluated. Forty countries currently operate submarines, mostly of the diesel-electric variety. Two potential peer competitors have significant nuclear submarine capability, the Russians and the Chinese. Qualitatively, none will match the U.S. force, however, the employment of submarines by many countries falls into the category of placing silent mobile mine field equivalents at sea in areas where we would like to operate surface combatants. This anti-

ship mission implies that the opponents submarine force need only train to a limited mission syllabus in waters close to home. Some of the fledgling submarine forces around the world will soon become significant hazards to navigation.

Here is the SSN's niche, forward deployed ASW. It sounds like a familiar mission. It was the hallmark of the Cold War submarine force. Together with Indications and Warnings (I&W), the ASW mission is still the most relevant capability that the submarine force can bring to the joint force commander. This implies that the proper niche is independent submarine operation, forward deployed, using the SSN's key combat feature, stealth. No support forces are necessary for this mission and until U.S. space based systems can identify everything that moves, anywhere on the globe, communicate that information in real time, and provide an instant kill of a submerged target, the submarine's forward ASW niche is secure.

Conclusion

The National Military Strategy of the 21st Century will emphasize the use of smaller, lighter forces in situations where the U.S. maintains dominant battlespace knowledge. There is significant uncertainty in the world environment and this will continue throughout the next century. Smaller defense budgets in this country along with those of our allies will put a sharp focus on the debate between leveraging high technology and maintaining force structure and readiness. The submarine force has a significant stake in this debate. Ballistic missile submarines are a reliable, secure, and flexible part of the country's strategic forces. No one is willing to take the risk associated with dismantling the SSBN force even though a strategic pause is clearly suggested in our future.

Currently the submarine force leadership is attempting to hold on to tactical force structure by fashioning the SSN into a battle group element. This is not the strongest role for the submarine but is the "only game in town." In the end this will not be a sufficient reason for maintaining 50 or even 45 attack submarines. The submarine force must play upon the strengths of the SSN to carve out the proper niche in the future. Forward

thinking strategists see the submarine as an essential part of the naval force structure while the future of the CVBG appears to be finite. Gambling the future of the submarine on the future of the carrier is a mistake.

The proper niche for the SSN is forward deployed in the ASW and I&W role. With the future force of 45-50 SSNs, the roles and missions of the force must be limited. This means that perhaps only one SSN should be assigned to the battle group vice two. It also means that the submarine force's recent embrace of the strike and SOF missions needs to be reevaluated and put into the training and employment priority list in the proper place. For example, using an SSN as the ready strike platform in the Persian Gulf will not be a wise use of limited assets in the future.

The decision to return to a more limited role for the SSN has budget implications in the coming decade. Along with force downsizing, the design of the new attack submarine (NSSN) can be reevaluated to reduce its "multi-mission" capability. For example, any notion of vertical launch tubes should be discarded. Also, the modular design for inserting other mission capabilities should be scrutinized. An affordable "son of Seawolf" design is required. This implies that the NSSN needs to be optimized for ASW and I&W. The weapons capability can be significantly downsized from that of the Seawolf Class and the Improved Los Angeles Class. With COTS equipment used in place of expensive legacy systems and a less robust sonar package, the NSSN can be built for under \$1.5B. It is also critical that the submarine force leadership work toward a single supplier for nuclear submarines. The premium paid for keeping two nuclear submarine building yards open is prohibitive. The most logical candidate from a capacity and economy of scale perspective is to build all navy ships, including nuclear submarines, at Newport News Shipbuilding.

The nuclear submarine is clearly a relevant contributor to the future National Military Strategy. With a force of 14 SSBNs and 45 SSNs, the U.S. will continue to dominate the undersea battlespace for the foreseeable future. It is critical in this effort that the

submarine force not try to be something that it is not, a full time, multi-purpose, battle group asset

Submerged ASW and I&W are relevant missions in the NMS of the future. No other part of the nation's military force can perform these vital tasks in the face of potential competitors that continue to enhance the capabilities of their nuclear and conventional submarine forces. The Russian submarine force has been upgraded while being reduced in numbers over the past seven years. The Chinese are also assembling a robust submarine capability. The South Asian Navies continue to flex their new submarine capability in the Indian Ocean, and although an Iranian Kilo Class submarine may not be able to shut down the Strait of Hormuz tomorrow, what will be the case a decade from now?

The SSN must be optimized to operate independently in its traditional role and submariners must return to their Cold War roots in perfecting the art of ASW while keeping a watchful eye on the adversary's front porch. It is time to return to the proper niche, to again run silent, just not quite so deep.

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